

REMARKS

I. Introduction

Claims 1 to 7 are pending in the present application. In view of the foregoing amendments and following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for foreign priority and the indication that all of the certified copies of the priority documents have been received.

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

II. Defective Oath or Declaration

The Office Action alleges that the oath or declaration was not executed by any of the Applicants. However, an executed Declaration and Power of Attorney was filed on May 13, 2002 in response to the Notice to File Missing Parts of Application, dated March 13, 2002. Applicants enclose herewith a courtesy copy of the response to the Notice to File Missing Parts, including a copy of the executed Declaration and Power of Attorney.

III. Objection to the Specification

As regards the objection to the Specification, the Examiner will note that the Specification has been amended as suggested, thereby obviating the present objection. No new matter has been added.

IV. Rejection of Claims 1 to 5 Under 35 U.S.C. § 103(a)

Claims 1 to 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of JP 59-24636 (“Hieda et al.”) and U.S. Patent No. 5,652,039 (“Tremain et al.”). Applicants respectfully submit that claims 1 to 5 are allowable for the following reasons.

Claim 1 relates to a method for bending a substantially plate-shaped, thermoplastic workpiece. Claim 1 recites heating a bending region of the workpiece at least up to plasticization. Claim 1 further recites inserting a bending element into the workpiece up to an apex of a desired bend. Claim 1 further recites bending the bending region about the

bending element acting on the workpiece about a front end, relative to an insertion direction, of the inserted bending element.

Hieda et al. purportedly relate to a working method including a bar heater for a cushioning and insulating material. A bar heater is stated to be heat pressed into a sheet-like thermoplastic foamed resin material from its surface towards its back in order to form a V-like groove in the sheet-like foamed resin material. The sheet-like foamed resin material is stated to be bent at the center line of the groove so as to fuse both the walls of the groove together.

Tremain et al. purportedly relate to a sandwich panel for angular forming. The panel is stated to be formed at room temperature using standard metal fabrication equipment and techniques. See col. 2, lines 48 to 50. The edge 9 of a forming tool, as illustrated in Figure 2, is stated to be used to form a hinge or fold line along the contact line of the forming tool via a cold forming process. See col. 5, lines 40 to 52.

Nowhere does the combination of Hieda et al. and Tremain et al. disclose, or even suggest, bending a bending region about a bending element acting on a workpiece about a front end, relative to an insertion direction, of an inserted bending element, as recited in claim 1. The Office Action admits that Tremain et al., at least to the extent indicated by the partial translation relied upon in the Office Action, do not disclose bending a bending region about a bending element acting on a workpiece about a front end, relative to an insertion direction, of an inserted bending element, as recited in claim 1. Applicants respectfully request a full English-language translation of Hieda et al. with the next Office communication.

The Office Action relies on Tremain et al. to allegedly remedy the admitted deficiency of Hieda et al. The Office Action alleges that Tremain et al. disclose bending a sandwich panel at a hinge or fold with or without assistance of a forming tool 5. Office Action at p. 4. Applicants respectfully disagree. The Office Action relies on col. 5, lines 40 to 67, which state in relevant part as follows:

Once the fold is initiated in this way, it will propagate in an entirely progressive and predictable manner provided sufficient bending moment is applied, with or without the assistance of the forming tool.

However, this reference in no way positively discloses bending the sandwich panel at the hinge or fold with the assistance of the forming tool, as alleged by the Office Action. Rather,

this reference merely discusses details relating to the propagation of the fold, i.e., the reference generally describes that once the hinge is formed the presence of the forming tool will not affect the propagation of the fold. This is not the same as positively disclosing that the forming tool should be left in place and the panel should be bent with the assistance of the forming tool.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As stated above, the combination of Hieda et al. and Tremain et al. fails to disclose, or even suggest, each and every feature of claim 1. It is therefore respectfully submitted that the combination of Hieda et al. and Tremain et al. does not render obvious claim 1. Therefore, withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of claim 1 are respectfully requested.

The Office Action's allegation that it would have been obvious to one of ordinary skill in the art at the time of the invention to bend a sandwich panel about the bending element in the process of Hieda et al. as described by Tremain et al. to provide more accurate and reliable bending and to provide a product having extended utility is completely unsupported. Respectfully, Tremain et al. specifically point out, with respect to fold formation, the presence of the forming tool in no way makes a difference in the final product. See col. 5, lines 53 to 56. Further, as indicated above, Hieda et al. do not disclose bending over the forming tool. Therefore, the combination of Hieda et al. and Tremain et al. in no way provides a suggestion or motivation to bend the sandwich panel about the bending element for any type of enhanced product utility and performance, as alleged by the Office Action.

Further, Applicants respectfully submit that one skilled in the art of bending a *thermoplastic foam resin*, as described by Hieda et al., would not have looked to Tremain et

al., which relates to cold bending of metal panels, for details such as whether to bend the material being worked over a heated bar.

In view of all of the foregoing, it is respectfully submitted that the combination of Hieda et al. and Tremain et al. does not render unpatentable claim 1.

Claims 2 to 5 depend from claim 1 and therefore include all of the limitations of claim 1. Therefore, it is respectfully submitted that these dependent claims are allowable for at least the same reasons provided above in support of the patentability of claim 1. *In re Fine, supra* (any dependent claim that depends from a non-obvious independent claim is non-obvious).

V. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

KENYON & KENYON

Dated: July 7, 2001 By:


Richard L. Mayer
Reg. No. 22,490

One Broadway
New York, New York 10004
(212) 425-7200

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